

Appl. No. 10/689,380  
Amdt. dated 29 June 2006  
Reply to Office action of 29 March 2006

**Amendments to the Drawings:**

Submitted herewith are eight sheets of formal drawings in place of the eight sheets of informal drawings filed with the application. The formal drawings address the informalities noted by the examiner.

Attachments: Replacement sheets 1/8 – 8/8

### **REMARKS/ARGUMENTS**

In response to paragraph 3 of the Office action, it is respectfully submitted that a certified copy of the 0309195.6 application was submitted to the PTO and received by the PTO on March 15, 2004, as demonstrated by a copy of a return receipt postcard attached hereto.

In response to paragraph 4 of the Office action, the reference to "International Conference on Supercomputing" was a continuation of the citation for the reference in the first line of form PTO/SB/08B. Similarly, the reference to "Int'l Conference on Parallel and Distributed Processing . . ." was a continuation of the citation for the reference in the third line of form PCT/SB/08B.

In response to paragraph 5 of the Office action, the title has been amended to recite "Method for Generating A Reflection of Data in a Plurality of Processing Elements." That language tracks the language of the preamble of claim 1. If the examiner remains of the opinion that the amended title is not descriptive, the examiner is invited to suggest an appropriate title.

In response to paragraph 6 of the Office action, formal drawings are submitted herewith. More particularly, eight (8) sheets of formal drawings, labeled 1/8-8/8 are submitted herewith in place of the informal drawings filed with the application. It is respectfully submitted that the formal drawings address the informalities identified by the examiner.

In response to paragraph 7 of the specification, the abstract has been amended to correct the informalities noted by the examiner.

In response to paragraph 8 of the Office action, paragraph [0011] has been amended to correct the errors in the use of the MOD operator. It is believed that a later use of the MOD operator appearing in paragraph [0070] is correct.

In paragraph 9, a number of objections to the claims have been raised. The claims have been amended to address each of the examiner's concerns with one exception. The examiner requested that definitions for the terms "Col index" and "Row index" be added to claims 3, 4, 14, 15, and 23. It is respectfully submitted that the terms "Col index" and "Row index" are, on their face, descriptive terms requiring no further definition. If the examiner remains of the opinion that these phrases, on their face, do not convey to a person of ordinary skill in the art what they represent, the examiner is invited to suggest definitions that would be acceptable to the examiner.

With respect to the phrase "array size," a definition for that phrase has been added to each of the claims identified by the examiner.

In paragraph 11 of the Office action, the examiner interpreted the "and" in claims 11 and 22 as an - - or - - . Those claims have been amended accordingly.

In paragraph 13 of the Office action, claim 28 was rejected on the basis of § 101. The claim has been amended as recommended by the examiner.

Applicant's attorney wishes to thank the examiner for the close reading which the examiner has given the specification and the claims and for identifying the informalities as set forth in the Office action.

In paragraph 15 of the Office action, claims 1, 2, 5, 10-13, 16, 21, 22, and 28 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Taylor (U.S. Patent No. 4,992,933). It is respectfully submitted that the examiner has misconstrued the teachings of Taylor and reads too much into Taylor.

Referring to claim 1, claim 1 has been amended to recite "selecting from said received data a final output based on a processing element's position." It is respectfully submitted that Taylor operates in a different manner. Turning to the first example provided in Taylor, Taylor discloses the following at column 9, lines 31 - 49:

The algorithm essentially comprises a series of shift operations which allow data to be moved around the array of processing elements on one of a set of closed, non-overlapping "paths", or "loops" such that, **starting at any processing element, exactly M steps along the path leads to the correct processing element for the mapping.** The North West quadrant of one possible way of setting out the set of loops for a 32 by 32 processor array is illustrated in FIG. 6. The remaining quadrants can be inferred by rotational symmetry.

It will be noticed that some loops are shorter than others and some have a clockwise and some an anti-clockwise direction of shift as indicated by the arrows. **However, the common factor for each of the loops is that a bit which is shifted 33 times along the loop on which it is located will end up in the corresponding position in the adjacent quadrant.** In other words, in 33 steps, the whole array is rotated by 90 degrees. (emphases added.)

A second algorithm disclosed in Taylor begins at the bottom of column 9 and continues on column 10. The algorithm is comprised of various global shift instructions which may or may

not need to be locally modified. At the end of all of the instructions, the data arrives at the appropriate processing element such that the processing element need output only the last piece of data received. It is thus seen that Taylor discloses a method in which the data is moved a number of steps, with each piece of data arriving at the appropriate processing element at the end of the loop. A processing element need only output the last piece of data it receives.

In contrast, and as set forth in amended claim 1, each of the processing elements receives data from all of the other processing elements from either the row or column in which that particular processing element is located. Thereafter, the processing element must select from amongst all of the received data based on that processing element's position in the array to select an appropriate final output.

It is applicant's position that the examiner has not demonstrated that Taylor anticipates independent claim 1. Accordingly, it is respectfully submitted that the rejection of independent claim 1 under 35 U.S.C. § 102(b) on the basis of Taylor be withdrawn.

With respect to independent claim 12, that claim recites "outputting data from each processing element as a function of that element's position in one of the row and column." It is respectfully submitted that Taylor does not disclose outputting data as a function of that element's position. Rather, in Taylor, each processing element merely outputs the last piece of data which it receives. The processing element need not know anything about its position in the array. For that reason, it is respectfully submitted that the rejection of claim 12 under 35 U.S.C. § 102(b) on the basis of Taylor be withdrawn.

With respect to claim 28, claim 28 recites substantially the same subject matter as claim 1. Therefore, for the reasons set forth above with respect to claim 1, it is respectfully submitted that claim 28 is also in condition for allowance.

In paragraph 24 of the Office action, claims 6-9 and 17-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Taylor. As these claims are all dependent claims, applicant chooses at this time not to present arguments in favor of the patentability of these or the other dependent claims. Applicant reserves the right to submit arguments in favor of the patentability of the dependent claims at a later time should that become necessary.

Applicant acknowledges that claims 3-4 and 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all

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of the limitations of the base claim and any intervening claims. Because applicant is of the opinion that the base claims from which those claims depend are now in condition for allowance, applicant chooses at this time not to write claims 3-4 and 14-15 in independent form.

The allowability of claims 23-27 over the art of record is gratefully acknowledged.

Applicant has made a diligent effort to place the instant application in condition for allowance. Accordingly, a notice of allowance for claims 1-28 is respectfully requested. If the examiner is of the opinion that the instant application is in condition for disposition other than through allowance, the examiner is respectfully requested to contact applicant's attorney at the telephone number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'E. Pencoske', with a stylized flourish at the end.

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